UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,016	07/18/2005	Masanobu Sugimoto	4676-25	6554

97561 7590 08/12/2010

Nixon & Vanderhye PC / DSM Desotech Inc.
11th Floor, 901 North Glebe Road
Arlington, VA 22203

EXAMINER	
COLE, ELIZABETH M	

ART UNIT	PAPER NUMBER
1782	

MAIL DATE	DELIVERY MODE
08/12/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/507,016
Filing Date: July 18, 2005
Appellant(s): SUGIMOTO ET AL.

Eric Sinn
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/28/10 appealing from the Office action mailed 2/2/10.

((1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application: Claims 21-25 are rejected and pending.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief

(6) Examiner's Statement of Grounds of Rejection

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

WITHDRAWN REJECTIONS

The 112 1st paragraph rejection of claims 12-25 is withdrawn in view of applicant's amendment dated 6/3/10 as set forth in the advisory action dated 6/16/10.

(7) Claims Appendix

The examiner has no comment on the copy of the appeal claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

WO0147824	Uchida et al	7-2001
5,526,529	Shustack	7-1996

Bicerano, J., (2002) Prediction of Polymer Properties. New York: Marcel Dekker. Pages 179-181.

Furukawa, J. (2003) Physical Chemistry of Polymer Rheology, Tokyo: Springer-Verlag. Pages 143-146 and 149-153.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 12-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al, WO 01/47824 A1 In view of Shustack, U.S. Patent No. 5,5336,529, with evidence from Bicerano (*Predication of Polymer Properties*) and Furukawa (*Physical Chemistry of Polymer Rheology*).

Uchida teaches a coated optical fiber comprising a primary coating and an outer or secondary coating layer, wherein the secondary coating is cured with a liquid composition comprising a urethane methacrylate, a polymerizable monomer of methacrylate-type, and initiator. See claim 1 and col. 3, lines 32-44). The amount of urethane methacrylate (A) is preferably 30- to 90-%. See page 8, lines 10-14. The amount of polymerizable monomer (B) ranges from preferably 1- to 60-%. The photoinitiator (C) ranges from 0.1- to 10-%. See page 9, lines 26-28Specific compositions are also set forth in Uchida. See Table 1. The urethane methacrylate is based on a polyether based polyol, a diisocyanate, and a hydroxyl group-containing meth(acrylate). See page 3, lines 4-14. For polyols for synthesizing urethane (meth)acrylate, Uchida teaches polyether diols such as polypropylene glycol. See page 5, lines 14-19. Bisphenol A is taught as a suitable alilcyclic polyether diol. See page 6, lines 13-16. Given the molecular weight of urethane meth(acrylate) and polyol precursors for synthesizing, a molecular weight of the polyol must be within the range claimed. See page 7, lines 28- page 8, line 3. Uchida teaches that temperature also affects the modulus. See page 9, lines 29-34. With regard to the claimed modulus of

the primary and secondary coating layers, Uchida teaches a first or primary coating which is flexible. A flexible material will have a low modulus. Uchida teaches a second coating as set forth above. Uchida teaches that the second coating should be rigid. See page 1, lines 12-16. Uchida teaches that the second coating should have a modulus of greater than 50 Mpa, preferably more than 200 Mpa, particularly preferably more than 400 MPa. See page 2, lines 29-30, page 12, lines 5-19. Examples 1 and 2 show a modulus of the second coating of 520 and 460 MPa. Therefore, Uchida teaches fibers which have a low modulus primary coating and a high modulus second coating.

However, Uchida differs from the claimed invention because it does not teach that the primary coating should have a modulus of less than 3 MPa at 23C. Shustack teaches that a suitable modulus for the low modulus primary coating of an optical fiber is 2.03 MPa, (See examples which teach a modulus of 295.8 for the modulus of the primary coating, which converts 2 .03 MPa). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected values for the modulus of the primary coating in Uchida of less than 3 MPa, in view of the examples of Shustack which teach that in the art of optical fibers, a modulus of less than 3 MPa was considered and acceptable low modulus for the primary coating of an optical fiber which comprised both a primary and second coating.

Uchida differs from the claimed invention Uchida does not disclose the glass transition temperature claimed for the cured secondary coating. However, with regard to the glass transition temperatures claimed for the secondary coating, Shustack teaches values for the Tg of about 50 degrees C which meet the claimed values. See

examples as well as col. 2, lines 38-51. Therefore, since Shustack teaches that the glass transition temperature of the secondary coating should be high in order to allow the coating to function as a hard protective layer, it would have been obvious to have selected a value of about 50 degrees C as the Tg of the secondary coating in Uchida, in order to form a secondary coating which was hard and protective.

Uchida is silent regarding the stress relaxation time of the compounds. It is noted that the stress relaxation time is defined at page 18 of the instant application at lines 1-7 and the limitation of stress relaxation time is interpreted in light of this definition. The composition taught by Uchida, however, is substantially similar to the claimed invention. It comprises overlapping ranges of the urethane methacrylate polyether backbone, a polymerizable monomer, photo initiator, and subsequent limiting compounds. The resulting composition is cured by UV radiation in both the prior art reference and in the instant specification and thus the processing conditions are substantially the same. Compositions of the same materials would exhibit a similar range of properties. Evidence of the correlation between the polymeric material and its glass transition and relaxation time are clear: 1) glass transition is affected by factors including structural, chemistry, molecular weight, & morphology ({Bicerano} Pages 179 & 180); and 2) glass transition time appears to be the only non-constant or non-integer factor in a general estimation of the relaxation time of a polymer ({Furukawa} Pages 146, 149, & 150 | Eqs. 16.27 & 17.1). Since the same polymeric materials generally

exhibit the same properties, the polymer compositions appear to have the same glass transition temperatures and stress relaxation times as the claimed invention.

(10) Response to Argument

Appellant argues that Uchida does not disclose the claimed modulus of less than 3 Mpa for the primary coating, the claimed glass transition temperature and the claimed stress relaxation time of the secondary coating . However, with regard to the modulus of the primary coating, Uchida does disclose that in forming optical fibers comprising a primary coating and a secondary coating that the primary coating should be flexible. See page 1, line 14. Further, Shustack teaches that a suitable modulus for the primary coating is less than 3 MPa. (See the examples of Shustack which teach a modulus of 295.8 for the modulus of the primary coating, which converts 2 .03 MPa). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected values for the modulus of the primary coating in Uchida of less than 3 MPa, in view of the examples of Shustack which teach that in the art of optical fibers, a modulus of less than 3 MPa was considered and acceptable low modulus for the primary coating of an optical fiber which comprised both a primary and second coating. Appellant argues that it cannot be argued that the primary coating of Uchida inherently meets the claimed limitation of a modulus of less than 3 MPa. However, the rejection does not state that the primary coating of Uchida necessarily or inherently has a modulus of less than 3 MPa, but rather states that Uchida teaches that optically fibers comprising a primary and secondary coating typically have a flexible primary coating. A

flexible coating will have a low modulus, but Uchida does not quantify what is meant by a flexible or low modulus coating. However, Shustack teaches that a suitable modulus for the primary coating in optical fibers comprising a primary coating and a secondary coating is less than 3MPa. Therefore, it would have been obvious to have provided a primary coating having a low modulus of less than 3MPa as taught by Shustack as the flexible primary coating of Uchida.

Appellant argues that Uchida does not disclose the claimed glass transition temperature and the claimed stress relaxation time for the secondary coating. However, while Uchida does not disclose these values, Uchida does disclose that the composition for the secondary coating is the same as the claimed coating composition. Further, Uchida processes the coating composition by UV curing which is the same process by which the instant coating is cured. Therefore, it is reasonable to expect that the composition of Uchida would have substantially the same properties since it has the same composition which is processed in the same way to make the same product, (a coated optical fiber). Additionally, Shustack teaches that desirably the secondary coating of an optical fiber has a glass transition temperature of about 50 C, which is within the claimed range, in order to provide a hard protective layer. Therefore, it would have been obvious to have provided the secondary coating of Uchida so that it had a glass transition temperature as taught by Shustack in order to form a hard protective layer for the fiber. Similarly, with regard to the relaxation time, since Uchida teaches the same composition which is made by the same process to form the same type of product, (an optical fiber), it is reasonable to expect that the composition of Uchida

would possess the claimed stress relaxation time. Further, it is noted that the glass transition time appears to be the only non-constant or non-integer factor in a general estimation of the relaxation time of a polymer, (see Furukawa Pages 146, 149, & 150 and equations 16.27 & 17.1). Therefore, since Uchida teaches the same amounts and components as set forth in claim 12 as elements a, b and c,

Appellant argues that Furukawa and Bicerano are not drawn to optical fibers and therefore are silent and unhelpful with respect to teaching about the glass transition temperature and relaxation time of the secondary coating and the modulus of the primary coating. However, Shustack teaches the modulus of the primary coating as well as the glass transition temperature which is suitable for forming a hard and protective cured secondary coating for an optical fiber. Further, Furukawa and Bicerano are relied on as evidentiary references in support of the position that since the composition and processing of the secondary coating of Uchida is substantially the same as the claimed secondary coating, that the secondary coating would have the same properties of glass transition temperature and stress relaxation time. Appellant does not traverse the teachings of Furukawa and Bicerano regarding the inter-relationship between polymer composition, glass transition temperature and the stress relaxation time of polymers.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Elizabeth M. Cole/

Primary Examiner, Art Unit 1782

Conferees:

/D. Lawrence Tarazano/

Supervisory Patent Examiner, Art Unit 1786

/Benjamin L. Utech/

Primary Examiner